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Acute small bowel obstruction in a girl, caused by a jejunal bezoar composed of textile fibers

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ABSTRACT

We describe the case of a thirteen-year-old psychomotorally-retarded girl with acute small bowel obstruction caused by an unusual jejunal bezoar, composed of textile fibers. The diagnosis was radiologically confirmed by abdominal X-rays and an upper gastrointestinal contrast series. Via a small transverse laparotomy the bezoar was removed. Bezoars of the small bowel are rare. Although the bezoar in our patient was found in the jejunum, small bowel bezoars are most often located in the ileum, since this represents the narrowest part.

A bezoar is a mass composed of accumulated indigestible material in the gastrointestinal tract. The three major types of bezoar are phytobezoar (composed of vegetable matter), trichobezoar (hair) and pharmacobezoar (ingested medications). In addition, bezoars composed of other materials have been found. These include bezoars formed by remnants of vinyl gloves [1], tissue papers [2], and cotton [3]. Bezoars are rare, particularly in children. They are commonly found in the stomach and are associated with prior gastrointestinal surgery, but also with psychiatric disorders. Rarely, bezoars can be located in the small bowel [4]. In such cases, impaction usually occurs at the narrowest part of the small bowel, up to 75 cm proximal to the ileocecal valve, or at the valve itself [5].

1. Case report

We report the case of a thirteen-year-old psychomotorally-retarded girl, suffering from Dravet syndrome or severe myoclonus epilepsy of infancy (SMEI), who was referred to our emergency department by her nursing center. Her additional medical history included the laparoscopic construction of a gastrostomy at the age of seven for nutritional support. The girl had been swallowing small pieces of textile fibers for years, but this had never led to any problems. Four days prior to her presentation, however, she had supposedly ingested a fair amount of the stuffing of a cuddly toy. A day later she started to throw up. In the bilious vomit, parts of the stuffing and other fibers could be retrieved. Since three days her defecation had ceased. On physical examination the patient appeared dehydrated. Her abdomen was slightly distended, but supple and palpation was not very painful. No peristalsis was noted. White blood cell (WBC) count was 25.1 × 109/l, C-reactive protein (CRP) was not elevated. An abdominal X-ray showed some distended small bowel loops and fluid levels. The girl was admitted to the ward and a nasogastric tube was introduced. Rectal wash outs with 10cc water/kg were started twice a day, producing considerable amounts of indigested fibers. Intravenous rehydration was commenced. An upper gastrointestinal (GI) contrast study revealed possible signs of a bezoar, causing an obstruction at the level of the jejunum. After 12 h another abdominal X-ray still showed stasis of contrast in the dilated stomach and in the same dilated jejunal loops (Fig. 1) and the indication for surgery was made. Due to the distension, laparoscopy was not considered feasible. Via a small central transverse laparotomy, cranial to the umbilicus, the abdomen was opened. At the junction of the jejunum and ileum a bezoar was detected, causing total obstruction. A longitudinal enterotomy was made and, following desufflation, the 10 cm measuring bezoar was evacuated (Fig. 2). The enterotomy was closed transversally. The stomach was palpated but no masses were discovered. A central venous line was placed for total parenteral nutrition. In the course of a week, enteral feeding was increased and the central line could be removed.

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Fig. 1. Abdominal X-ray 12 h after the upper gastrointestinal (GI) contrast study. Note the dilated stomach and stasis of contrast in the small bowel.

2. Discussion

Most bezoars are located in the stomach. They are usually discovered as an incidental finding in patients with non-specific symptoms. Migration to the small bowel may occur and this can lead to obstruction at, most often, the level of the ileum [5]. Subsequently acute abdomen with symptoms as abdominal pain, nausea, vomiting and elevated WBC may develop [6,7]. Although our patient was indeed vomiting and defecation had ceased, abdominal tenderness was limited. Therefore, we chose to rehydrate the patient and to perform a repeat abdominal X-ray 12 h after the initial upper GI contrast series, which had raised suspicion of a total obstruction caused by a jejunal bezoar. The repeat abdominal X-ray confirmed a total obstruction at the jejunal level, so an additional computed tomography (CT) scan was not indicated. Due to the location at the jejunum an endoscopic attempt to remove the bezoar was not possible. The distension hindered a laparoscopic approach and for this reason a laparotomy was performed.

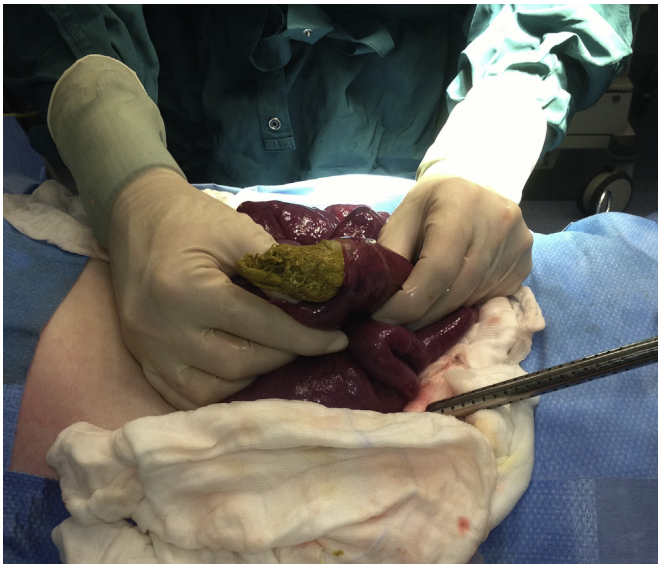

Fig. 2. Removal of the bezoar through a longitudinal incision in the jejunum. Note the large pieces of textile on top of the smaller fibers.

Our patient obviously suffered from pica, defined as the persistent craving and compulsive eating of non-food substances. Risk factors for pica are female sex, mental retardation, young age and underlying behavioral disorders [8]. All these factors indeed applied to our patient. In children, trichobezoars seem to make up for the majority of pica based bezoars. Trichobezoars can cause obstruction due to extensions that protrude from the hairball in the stomach into the small bowel, a condition often referred to as Rapunzel syndrome [8]. However the pica bezoar in our patient was not formed by hair, but by textile fibers. Also, unlike the situation in Rapunzel syndrome, no gastric bezoar component was present in our patient. This is remarkable, because a small bowel bezoar is most often accompanied by a parent bezoar in the stomach [3]. Isolated bezoars have been described before [3,9], but nevertheless represent infrequent findings, since bezoars are more prone to get stuck in the narrower ileum.

Judging from the bezoars appearance (Fig. 2), it is likely that the patient swallowed large pieces of textile over a short period of time which may have accumulated with already present smaller fiber parts in the jejunum and have resulted in a rather abrupt obstruction. Following surgery, substantial amounts of fibers were detected in the stools and rectal rinsing water of our patient for a week. This demonstrates the quantity of foreign material still present in the rest of the alimentary tract after the bezoar had been removed. The nursing center was strongly advised to prevent the patient from eating indigestible fibers in the future.

3. Conclusion

Most bezoars develop in the stomach. If present in the small bowel, they are usually located at the level of the ileum. Jejunal bezoars are infrequent findings and require surgical removal. We describe the rare case of a girl with acute small bowel obstruction caused by an isolated jejunal bezoar, composed of textile fibers. We found only one similar case in English literature, but this involved an adult patient [3].

Conflict of interest

The authors of this manuscript declare no conflicts of interest.

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None.

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